FIG. 1

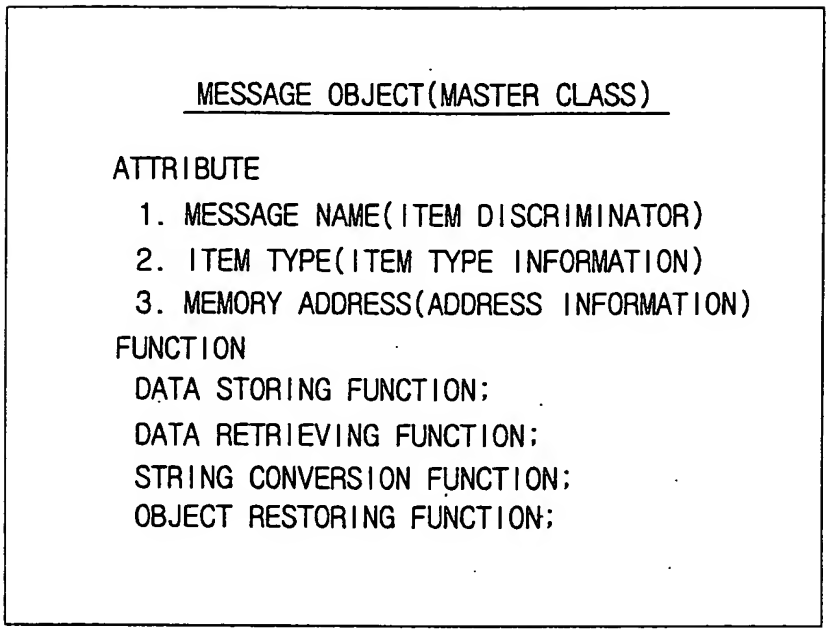

MESSAGE OBJECT(MASTER CLASS)
ATTRIBUTE
1. MESSAGE NAME(ITEM DISCRIMINATOR)
2. ITEM TYPE(ITEM TYPE INFORMATION)
3. MEMORY ADDRESS(ADDRESS INFORMATION)
FUNCTION
DATA STORING FUNCTION;
DATA RETRIEVING FUNCTION;
STRING CONVERSION FUNCTION;
OBJECT RESTORING FUNCTION;

FIG. 2

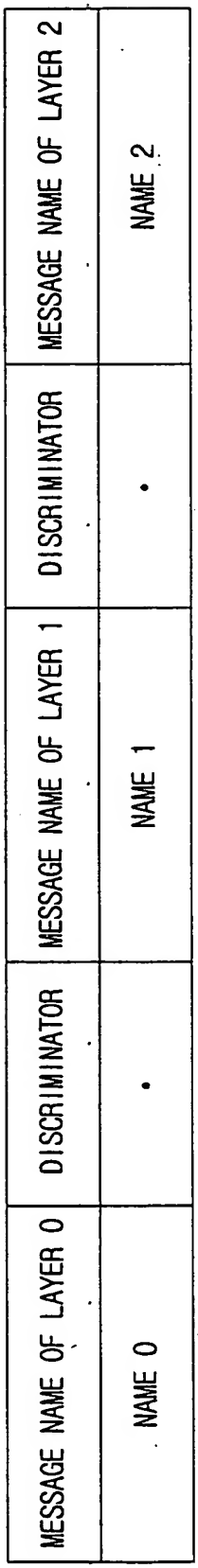

MESSAGE NAME OF LAYER 0
NAME 0
DISCRIMINATOR
•
MESSAGE NAME OF LAYER 1
NAME 1
DISCRIMINATOR
•
MESSAGE NAME OF LAYER 2
NAME 2

FIG. 3A

LAYER 0		LAYER 1		LAYER 2	
MESSAGE NAME	"MESSAGE EXAMPLE"				
LIST ITEM TYPE	MESSAGE OBJECT TYPE				
LINKED LIST	POINTER MESSAGE OBJECT	MESSAGE NAME	"SAMPLE1"		
		LIST ITEM TYPE	STRING TYPE		
		LINKED LIST	POINTER "SAMPLE STRING1"		
			POINTER "SAMPLE STRING2"		
	POINTER MAESSAGE OBJECT	MESSAGE NAME	"SAMPLE2"		
		LIST ITEM TYPE	MESSAGE OBJECT TYPE		
		LINKED LIST	POINTER MESSAGE OBJECT	MESSAGE NAME	"SAMPLE3"
				LIST ITEM TYPE	STRING TYPE
				LINKED LIST	POINTER "SAMPLE SUB STRING1"
					POINTER "SAMPLE SUB STRING2"
			POINTER MESSAGE OBJECT	MESSAGE NAME	"SAMPLE4"
				LIST ITEM TYPE	INTEGER TYPE
				LINKED LIST	POINTER 10000
					POINTER 20000

FIG. 3B

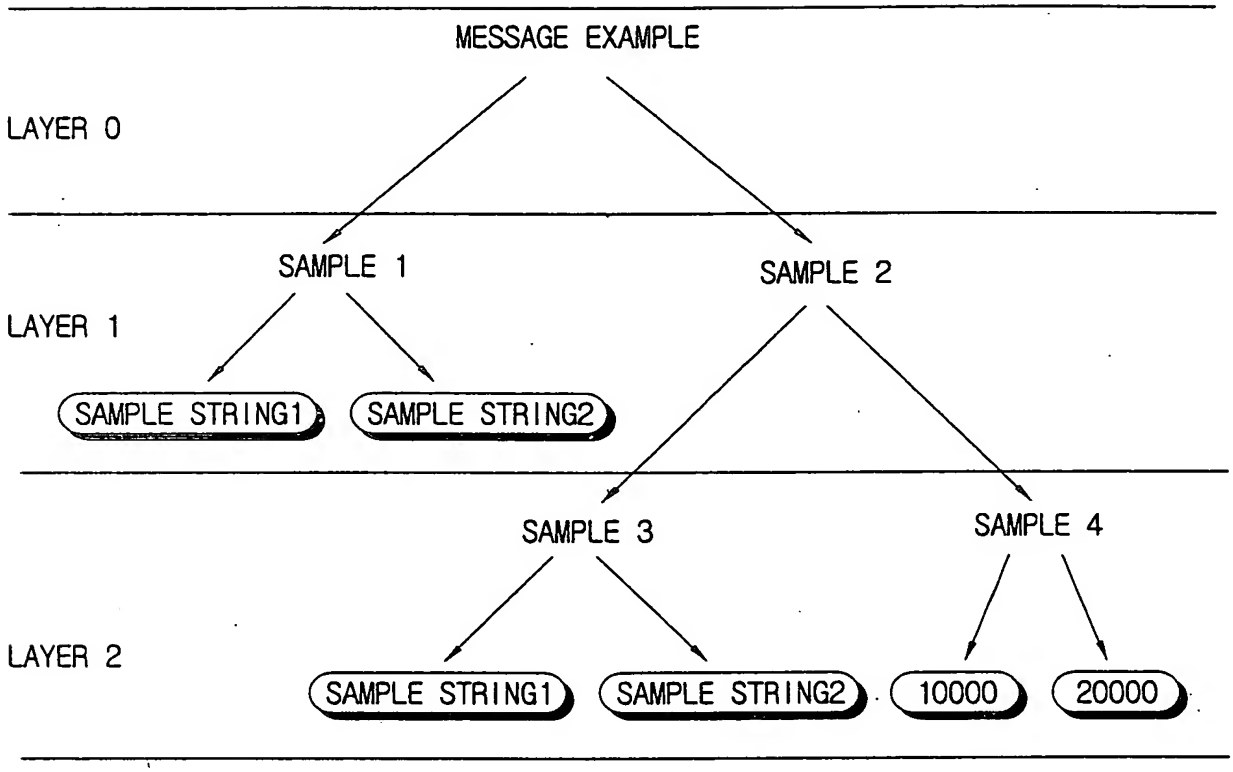

MESSAGE EXAMPLE
LAYER 0
SAMPLE 1
SAMPLE 2
LAYER 1
SAMPLE STRING1
SAMPLE STRING2
SAMPLE 3
SAMPLE 4
LAYER 2
SAMPLE STRING1
SAMPLE STRING2
10000
20000

FIG. 4

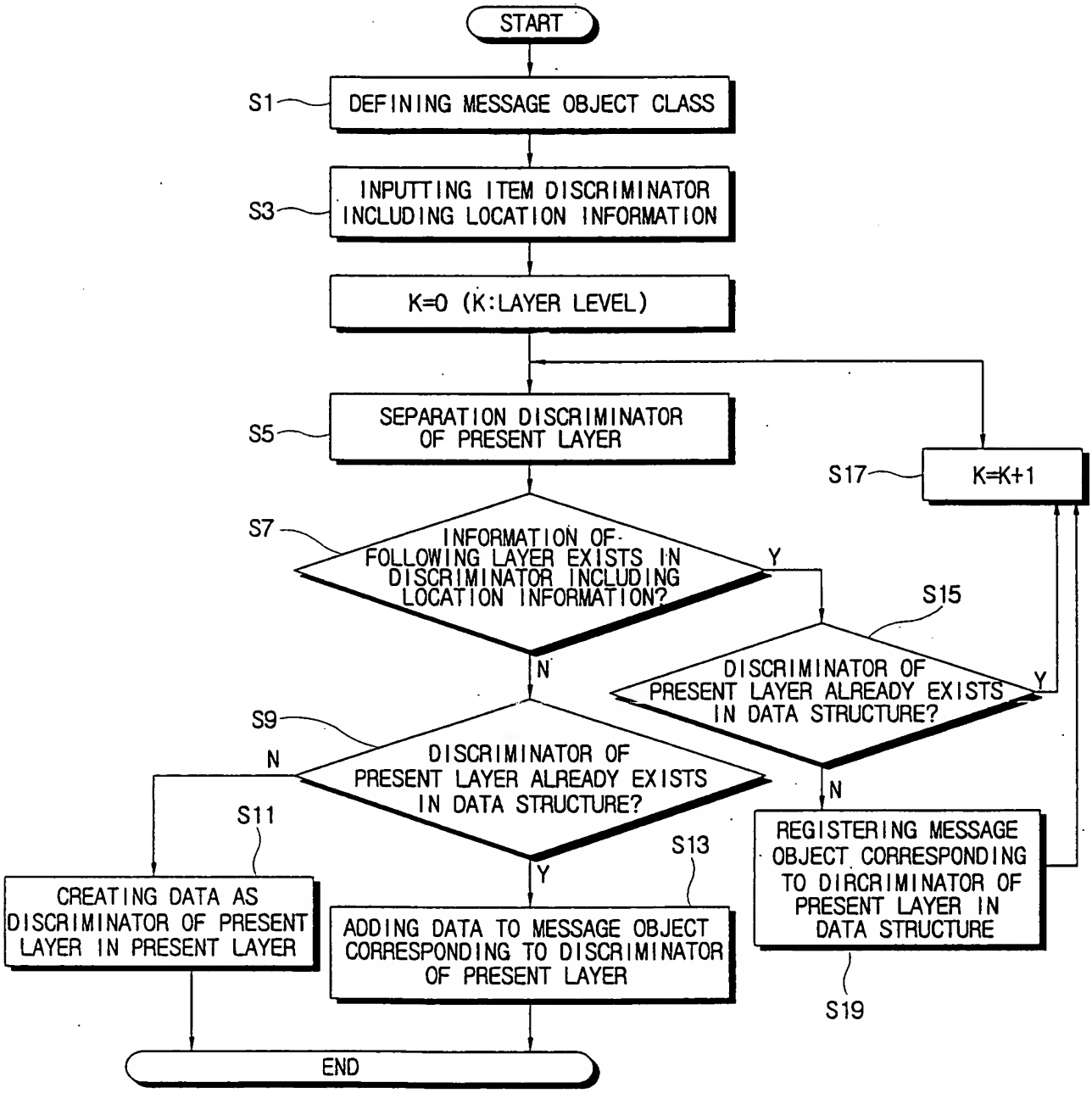

START
S1
DEFINING MESSAGE OBJECT CLASS
S3
INPUTTING ITEM DISCRIMINATOR INCLUDING LOCATION INFORMATION
K=0 (K:LAYER LEVEL)
S5
SEPARATION DISCRIMINATOR OF PRESENT LAYER
S17
K=K+1
S7
INFORMATION OF FOLLOWING LAYER EXISTS IN DISCRIMINATOR INCLUDING LOCATION INFORMATION?
Y
N
S15
DISCRIMINATOR OF PRESENT LAYER ALREADY EXISTS IN DATA STRUCTURE?
Y
N
S9
DISCRIMINATOR OF PRESENT LAYER ALREADY EXISTS IN DATA STRUCTURE?
N
Y
S11
CREATING DATA AS DISCRIMINATOR OF PRESENT LAYER IN PRESENT LAYER
S13
ADDING DATA TO MESSAGE OBJECT CORRESPONDING TO DISCRIMINATOR OF PRESENT LAYER
REGISTERING MESSAGE OBJECT CORRESPONDING TO DIRCRIMINATOR OF PRESENT LAYER IN DATA STRUCTURE
S19
END

FIG. 5

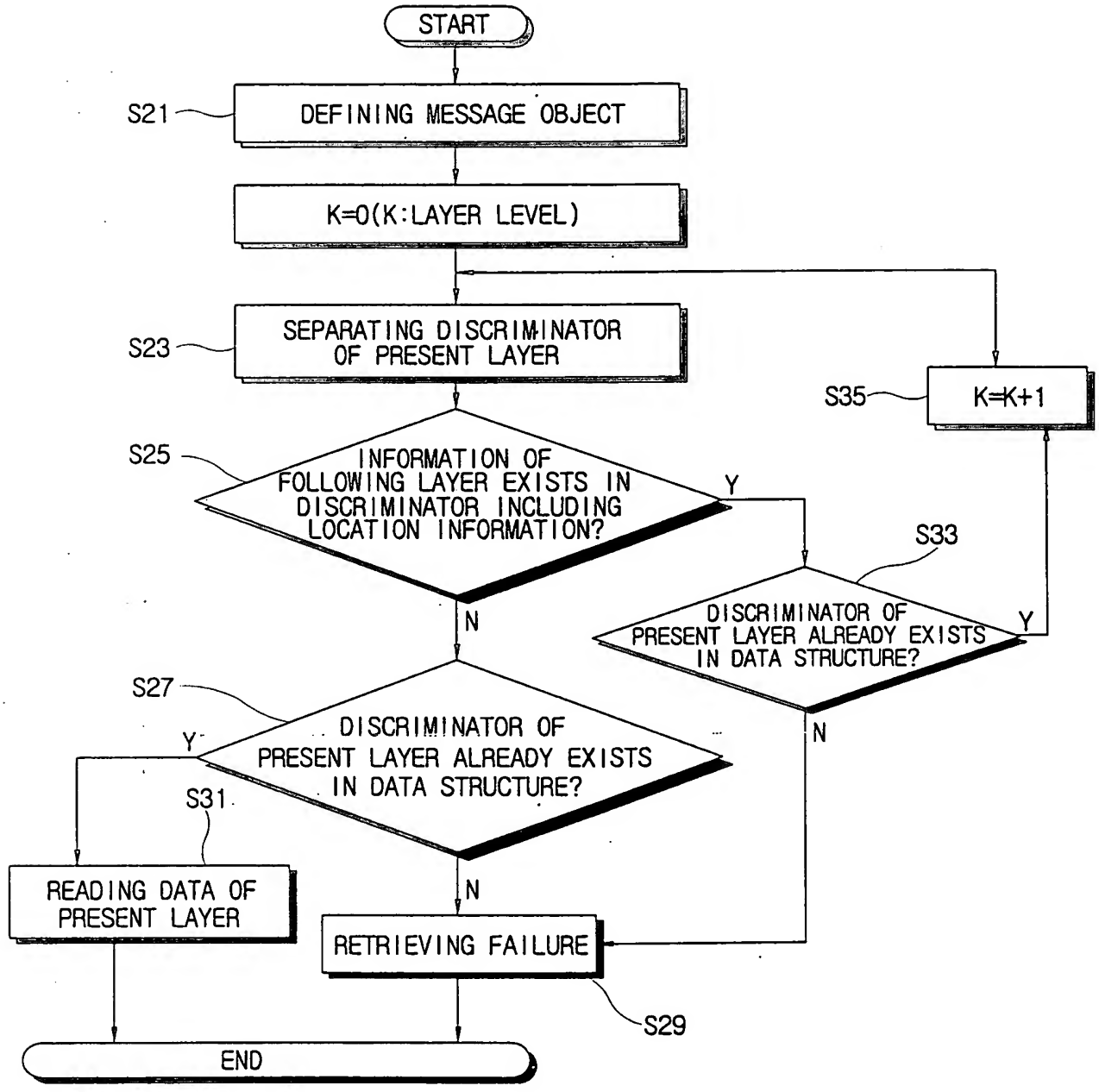
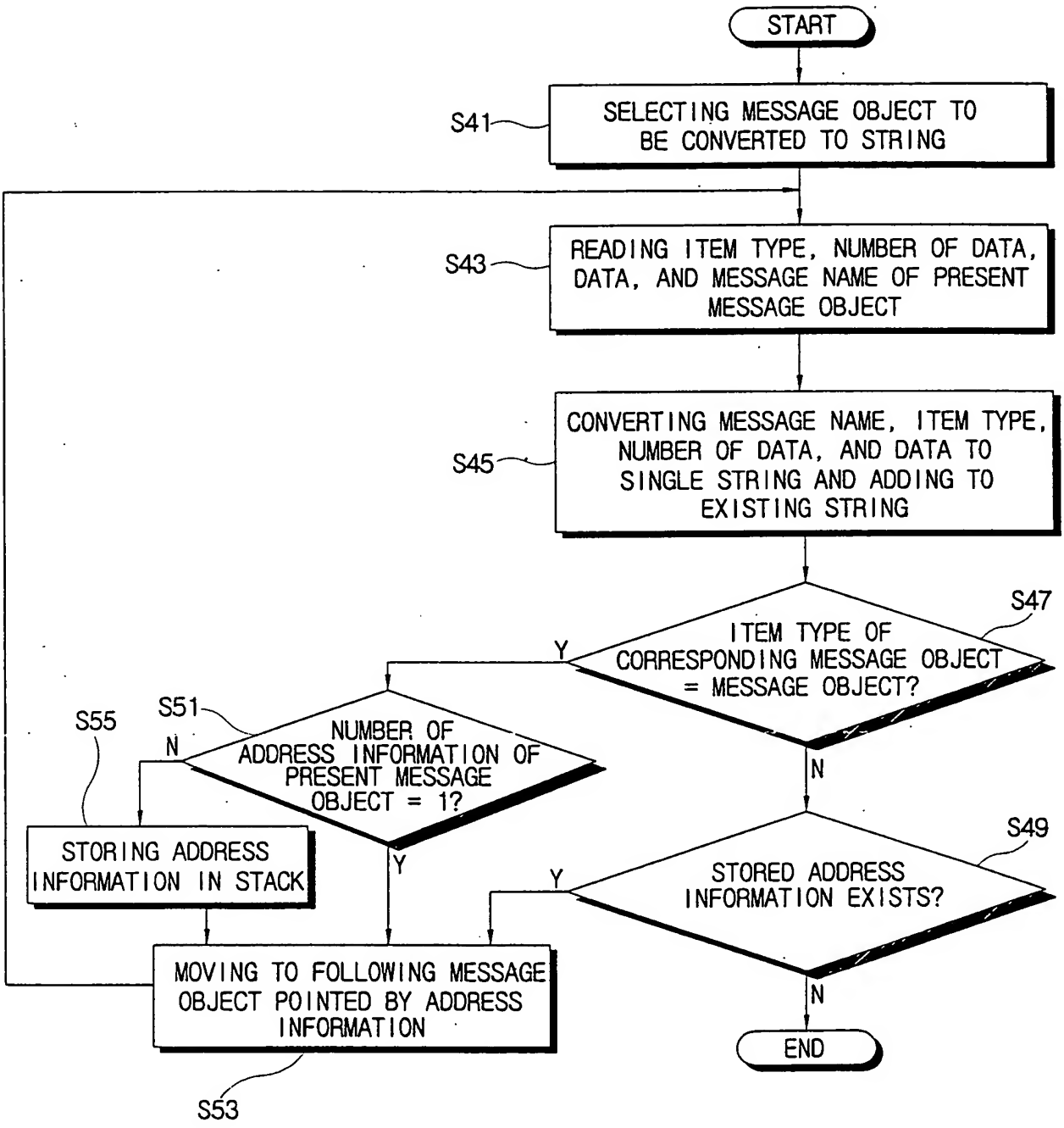

START
S21
DEFINING MESSAGE OBJECT
K=0(K:LAYER LEVEL)
S23
SEPARATING DISCRIMINATOR OF PRESENT LAYER
S35
K=K+1
S25
INFORMATION OF FOLLOWING LAYER EXISTS IN DISCRIMINATOR INCLUDING LOCATION INFORMATION?
Y
N
S33
DISCRIMINATOR OF PRESENT LAYER ALREADY EXISTS IN DATA STRUCTURE?
Y
N
S27
DISCRIMINATOR OF PRESENT LAYER ALREADY EXISTS IN DATA STRUCTURE?
Y
N
S31
READING DATA OF PRESENT LAYER
RETRIEVING FAILURE
S29
END

FIG. 6


START
S41
SELECTING MESSAGE OBJECT TO BE CONVERTED TO STRING
S43
READING ITEM TYPE, NUMBER OF DATA, DATA, AND MESSAGE NAME OF PRESENT MESSAGE OBJECT
S45
CONVERTING MESSAGE NAME, ITEM TYPE, NUMBER OF DATA, AND DATA TO SINGLE STRING AND ADDING TO EXISTING STRING
S47
ITEM TYPE OF CORRESPONDING MESSAGE OBJECT = MESSAGE OBJECT?
Y
N
S51
NUMBER OF ADDRESS INFORMATION OF PRESENT MESSAGE OBJECT = 1?
N
Y
S55
STORING ADDRESS INFORMATION IN STACK
S49
STORED ADDRESS INFORMATION EXISTS?
Y
N
MOVING TO FOLLOWING MESSAGE OBJECT POINTED BY ADDRESS INFORMATION
S53
END